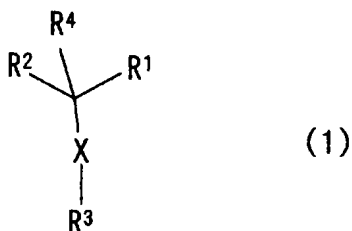


IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A compound represented by formula (1):



wherein,

R<sup>1</sup> represents phenyl which may have 1 to 3 substituents selected from halogen atoms, C<sub>1-6</sub> alkyl groups, trihalogenomethyl groups, C<sub>1-6</sub> alkoxy groups, formyl group, C<sub>2-6</sub> alkanoyl groups, carboxyl group, carboxyamino C<sub>1-6</sub> alkyl groups, C<sub>1-6</sub> alkoxycarbonylamino C<sub>1-6</sub> alkyl groups, oxo group, nitro group, cyano group, amidino group, C<sub>2-6</sub> alkenyloxy groups, hydroxy group, thioxo group, amino group, C<sub>1-6</sub> alkylamino groups, di(C<sub>1-6</sub> alkyl)amino groups, C<sub>1-6</sub> alkoxycarbonyl groups, carbamoyl group, C<sub>1-6</sub> alkylcarbamoyl groups, di(C<sub>1-6</sub> alkyl)carbamoyl groups, thiocarbamoyl group, C<sub>1-6</sub> alkylthiocarbamoyl groups, di(C<sub>1-6</sub> alkyl)thiocarbamoyl groups, mercapto group, C<sub>1-6</sub> alkylthio groups, C<sub>1-6</sub> alkylsulfinyl groups and C<sub>1-6</sub> alkylsulfonyl groups,

R<sup>2</sup> represents a pyridyl group which may be substituted with 1 to 3 substituents selected from halogen atoms, cyano group, C<sub>1-6</sub> alkyl groups, hydroxy group, C<sub>1-6</sub> alkoxy groups, C<sub>2-6</sub> alkenyloxy groups, carboxy C<sub>1-6</sub> alkyl groups, C<sub>1-6</sub> alkoxycarbonyl C<sub>1-6</sub> alkyl groups, hydroxy C<sub>1-6</sub> alkyl groups, C<sub>6-10</sub> aromatic hydrocarbon-sulfonyl C<sub>1-6</sub> alkyl groups, N,N-di(C<sub>1-6</sub> alkyl)aminosulfonyl C<sub>1-6</sub> alkyl groups, C<sub>6-10</sub> aromatic hydrocarbon-C<sub>1-6</sub> alkyl groups, C<sub>6-10</sub> aromatic hydrocarbon-thio C<sub>1-6</sub> alkyl groups, azido-C<sub>1-6</sub> alkyl groups, amino C<sub>1-6</sub> alkyl groups, C<sub>1-6</sub> alkylamino C<sub>1-6</sub> alkyl groups, di(C<sub>1-6</sub> alkyl)amino C<sub>1-6</sub> alkyl groups, hydroxy C<sub>1-6</sub> alkylamino C<sub>1-6</sub> alkyl groups, C<sub>1-6</sub> alkoxy C<sub>1-6</sub> alkylamino C<sub>1-6</sub> alkyl groups,

bis(C<sub>1-6</sub> alkoxy C<sub>1-6</sub> alkyl)amino C<sub>1-6</sub> alkyl groups, (hydroxy C<sub>1-6</sub> alkyl)(C<sub>1-6</sub> alkoxy C<sub>1-6</sub> alkyl)amino C<sub>1-6</sub> alkyl groups, C<sub>2-6</sub> alkanoylamino C<sub>1-6</sub> alkyl groups, di(C<sub>2-6</sub> alkanoyl)amino C<sub>1-6</sub> alkyl groups, carboxyamino C<sub>1-6</sub> alkyl groups, di(C<sub>1-6</sub> alkylcarbonylamino C<sub>1-6</sub> alkyl)amino C<sub>1-6</sub> alkyl groups, C<sub>1-6</sub> alkoxycarbonylamino C<sub>1-6</sub> alkyl groups, di(C<sub>1-6</sub> alkoxycarbonyl)amino C<sub>1-6</sub> alkyl groups, carbamoylamino C<sub>1-6</sub> alkyl groups, N-C<sub>1-6</sub> alkylcarbamoylamino C<sub>1-6</sub> alkyl groups, N,N-di(C<sub>1-6</sub> alkyl)carbamoylamino C<sub>1-6</sub> alkyl groups, aminosulfonylamino C<sub>1-6</sub> alkyl groups, N-C<sub>1-6</sub> alkylsulfonylamino C<sub>1-6</sub> alkyl groups, di(C<sub>1-6</sub> alkyl)aminosulfonylamino C<sub>1-6</sub> alkyl groups, C<sub>6-10</sub> aromatic hydrocarbon-sulfonylamino-C<sub>2-6</sub> alkanoylamino C<sub>1-6</sub> alkyl groups, amino C<sub>1-6</sub> alkylcarbonylamino C<sub>1-6</sub> alkyl groups, N-C<sub>1-6</sub> alkylamino C<sub>1-6</sub> alkylcarbonylamino C<sub>1-6</sub> alkyl groups, N,N-di(C<sub>1-6</sub> alkyl)amino C<sub>1-6</sub> alkylcarbonylamino C<sub>1-6</sub> alkyl groups, C<sub>6-10</sub> aromatic hydrocarbon-C<sub>2-6</sub> alkenylcarbonylamino C<sub>1-6</sub> alkyl groups, C<sub>6-10</sub> aromatic hydrocarbon-carbonylamino C<sub>1-6</sub> alkyl groups, C<sub>6-10</sub> aromatic hydrocarbon-thiocarbonylamino C<sub>1-6</sub> alkyl groups, C<sub>1-6</sub> alkoxyoxalylamino C<sub>1-6</sub> alkyl groups, (C<sub>6-10</sub> aromatic hydrocarbon-sulfonyl)(C<sub>1-6</sub> alkyl)amino C<sub>1-6</sub> alkyl groups, C<sub>1-6</sub> alkylsulfonylamino C<sub>1-6</sub> alkyl groups, C<sub>1-6</sub> alkylsulfonylamino C<sub>1-6</sub> alkyl groups, carbamoyloxy C<sub>1-6</sub> alkyl groups, N-C<sub>1-6</sub> alkylcarbamoyloxy C<sub>1-6</sub> alkyl groups, N,N-di(C<sub>1-6</sub> alkyl)carbamoyloxy C<sub>1-6</sub> alkyl groups, C<sub>6-10</sub> aromatic hydrocarbon-C<sub>1-6</sub> alkylcarbamoyloxy C<sub>1-6</sub> alkyl groups, C<sub>1-6</sub> alkoxycarbonyloxy-C<sub>1-6</sub> alkyl groups, C<sub>6-10</sub> aromatic hydrocarbon-oxycarbonyloxy C<sub>1-6</sub> alkyl groups, C<sub>6-10</sub> aromatic hydrocarbon carbonylhydrazonomethyl groups, C<sub>2-6</sub> alkenyl groups, carboxy-C<sub>2-5</sub> alkenyl groups, C<sub>1-6</sub> alkoxycarbonyl-C<sub>2-6</sub> alkenyl groups, carbamoyl C<sub>2-6</sub> alkenyl groups, formyl group, carboxyl group, C<sub>6-10</sub> aromatic hydrocarbon-carbonyl groups, C<sub>1-6</sub> alkoxycarbonyl groups, carbamoyl group, N-C<sub>1-6</sub> alkylcarbamoyl groups, N,N-di(C<sub>1-6</sub> alkyl)carbamoyl groups, C<sub>3-8</sub> cycloalkyl-C<sub>1-6</sub> alkylcarbamoyl groups, C<sub>1-6</sub> alkylthio C<sub>1-6</sub> alkylcarbamoyl groups, C<sub>1-6</sub> alkylsulfinyl C<sub>1-6</sub> alkylcarbamoyl groups, C<sub>1-6</sub> alkylsulfonyl C<sub>1-6</sub> alkylcarbamoyl groups,

hydroxyaminocarbonyl group, C<sub>1-6</sub> alkoxy carbamoyl groups, hydroxy C<sub>1-6</sub> alkylcarbamoyl groups, C<sub>1-6</sub> alkoxy C<sub>1-6</sub> alkylcarbamoyl groups, amino C<sub>1-6</sub> alkylcarbamoyl groups, amino C<sub>1-6</sub> alkylthiocarbamoyl groups, hydroxy C<sub>1-6</sub> alkylcarbamoyl groups, C<sub>1-6</sub> alkoxy carbonyl C<sub>1-6</sub> alkylcarbamoyl groups, C<sub>1-6</sub> alkoxy carbonylamino C<sub>1-6</sub> alkylcarbamoyl groups, C<sub>1-6</sub> alkoxy carbonylamino C<sub>1-6</sub> alkylthiocarbamoyl groups, C<sub>6-10</sub> aromatic hydrocarbon-carbamoyl groups, hydrazinocarbonyl groups, N-C<sub>1-6</sub> alkylhydrazinocarbonyl groups, N'-C<sub>1-6</sub> alkylhydrazinocarbonyl groups, N',N'-di(C<sub>1-6</sub> alkyl)hydrazinocarbonyl groups, N,N'-di(C<sub>1-6</sub> alkyl)hydrazinocarbonyl groups, N,N',N'-tri(C<sub>1-6</sub> alkyl)hydrazinocarbonyl groups, amino group, C<sub>1-6</sub> alkoxy C<sub>1-6</sub> alkylamino groups, amino C<sub>1-6</sub> alkylamino groups, (C<sub>1-6</sub> alkylamino C<sub>1-6</sub> alkylamino groups, (C<sub>1-6</sub> alkylamino C<sub>1-6</sub> alkyl)(C<sub>1-6</sub> alkyl)amino groups, C<sub>1-6</sub> alkoxy carbonylamino C<sub>1-6</sub> alkylamino groups, di(C<sub>1-6</sub> alkyl)amino C<sub>1-6</sub> alkylamino groups, carboxyl C<sub>1-6</sub> alkylamino groups, (carboxyl C<sub>1-6</sub> alkyl)(C<sub>1-6</sub> alkyl)amino groups, hydroxy C<sub>1-6</sub> alkylamino groups, (hydroxy C<sub>1-6</sub> alkyl)(C<sub>1-6</sub> alkyl)amino groups, C<sub>1-6</sub> alkylthio C<sub>1-6</sub> alkylamino groups, C<sub>1-6</sub> alkylaminocarbonyloxy C<sub>1-6</sub> alkylamino groups, (C<sub>1-6</sub> alkylaminocarbonyloxy C<sub>1-6</sub> alkyl)(C<sub>1-6</sub> alkyl)amino groups, C<sub>1-6</sub> alkylsulfinyl C<sub>1-6</sub> alkylamino groups, C<sub>1-6</sub> alkylsulfonyl C<sub>1-6</sub> alkylamino groups, groups represented by the formula: -N(R<sup>12</sup>)SO<sub>2</sub>R<sup>11</sup> (wherein, R<sup>11</sup> represents a C<sub>1-6</sub> alkyl group, hydroxy C<sub>1-6</sub> alkyl group, amino C<sub>1-6</sub> alkyl group, C<sub>1-6</sub> alkylamino C<sub>1-6</sub> alkyl group, di(C<sub>1-6</sub> alkyl)amino C<sub>1-6</sub> alkyl group, carboxy C<sub>1-6</sub> alkyl group, carbamoyl C<sub>1-6</sub> alkyl group, trifluoromethyl group, difluoromethyl group, fluoromethyl group, amino group, C<sub>1-6</sub> alkylamino group or di(C<sub>1-6</sub> alkyl)amino group, R<sup>12</sup> represents a hydrogen atom, C<sub>1-6</sub> alkyl group, hydroxy group or amino group), hydroxy C<sub>1-6</sub> alkoxy C<sub>1-6</sub> alkylamino groups, C<sub>6-10</sub> aromatic hydrocarbon-C<sub>1-6</sub> alkylamino groups, C<sub>1-6</sub> alkoxy carbonylamino groups, C<sub>6-10</sub> aromatic hydrocarbon-carbonylamino groups, hydroxyimino group, C<sub>1-6</sub> alkoxyimino groups, oxo group, hydroxyimino C<sub>1-6</sub> alkyl groups, C<sub>1-6</sub> alkoxy carbonyl C<sub>1-6</sub> alkylamino groups, (C<sub>2-6</sub>

alkanoylamino C<sub>1-6</sub> alkyl)amino groups, and C<sub>6-10</sub> aromatic hydrocarbon groups (in which, the C<sub>6-10</sub> aromatic hydrocarbon group may be substituted with 1 to 3 substituents selected from halogen atoms, C<sub>1-6</sub> alkyl groups, C<sub>1-6</sub> alkoxy groups, C<sub>2-6</sub> alkenyl groups, formyl group, C<sub>2-6</sub> alkanoyl groups, carboxyl group, carboxyamino C<sub>1-6</sub> alkyl groups, C<sub>1-6</sub> alkoxycarbonylamino C<sub>1-6</sub> alkyl groups, oxo group, nitro group, cyano group, amidino group, C<sub>2-6</sub> alkenyloxy groups, hydroxy group, thioxo group, amino group, C<sub>1-6</sub> alkylamino groups, di(C<sub>1-6</sub> alkyl)amino groups, amino C<sub>1-6</sub> alkyl groups, C<sub>1-6</sub> alkoxycarbonyl groups, carbamoyl group, C<sub>1-6</sub> alkylcarbamoyl groups, di(C<sub>1-6</sub> alkyl)carbamoyl groups, thiocarbamoyl group, C<sub>1-6</sub> alkylthiocarbamoyl groups, di(C<sub>1-6</sub> alkyl)thiocarbamoyl groups, C<sub>2-6</sub> alkanoylamino groups, C<sub>2-6</sub> alkanoyl(C<sub>1-6</sub> alkyl)amino groups, thio C<sub>2-6</sub> alkanoylamino groups, thio C<sub>2-6</sub> alkanoyl(C<sub>1-6</sub> alkyl)amino groups, formylamino group, formyl(C<sub>1-6</sub> alkyl)amino groups, thioformylamino group, thioformyl(C<sub>1-6</sub> alkyl)amino groups, C<sub>2-6</sub> alkanoyloxy groups, formyloxy group, mercapto group, C<sub>1-6</sub> alkylthio groups, C<sub>1-6</sub> alkylsulfinyl groups, C<sub>1-6</sub> alkylsulfonyl groups, aminosulfonyl group, C<sub>1-6</sub> alkylaminosulfonyl groups, di(C<sub>1-6</sub> alkyl)aminosulfonyl groups, C<sub>1-6</sub> alkylsulfonylamino groups, and C<sub>1-6</sub> alkylsulfonyl(C<sub>1-6</sub> alkyl)amino groups;

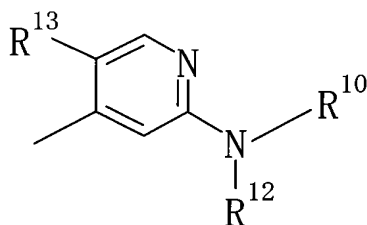
R<sup>3</sup> represents pyridyl which may have 1 to 3 substituents selected from halogen atoms, C<sub>1-6</sub> alkyl groups, trihalogenomethyl groups, C<sub>1-6</sub> alkoxy groups, formyl group, C<sub>2-6</sub> alkanoyl groups, carboxyl group, carboxyamino C<sub>1-6</sub> alkyl groups, C<sub>1-6</sub> alkoxycarbonylamino C<sub>1-6</sub> alkyl groups, oxo group, nitro group, cyano group, amidino group, C<sub>2-6</sub> alkenyloxy groups, hydroxy group, thioxo group, amino group, C<sub>1-6</sub> alkylamino groups, di(C<sub>1-6</sub> alkyl)amino groups, C<sub>1-6</sub> alkoxycarbonyl groups, carbamoyl group, C<sub>1-6</sub> alkylcarbamoyl groups, di(C<sub>1-6</sub> alkyl)carbamoyl groups, thiocarbamoyl group, C<sub>1-6</sub> alkylthiocarbamoyl groups, di(C<sub>1-6</sub> alkyl)thiocarbamoyl groups, mercapto group, C<sub>1-6</sub> alkylthio groups, C<sub>1-6</sub> alkylsulfinyl groups and C<sub>1-6</sub> alkylsulfonyl groups,

R<sup>4</sup> represents a hydrogen atom or a C<sub>1-6</sub> alkyl group,

X represents  $-S-$ ,  $-SO-$  or  $-SO_2-$ ;  
an N-oxide ~~or S-oxide~~ thereof; or a salt thereof..

Claims 2-7 (Canceled).

Claim 8 (Currently Amended): A compound according to Claim 1, wherein  $R^2$  represents a group represented by the following formula:



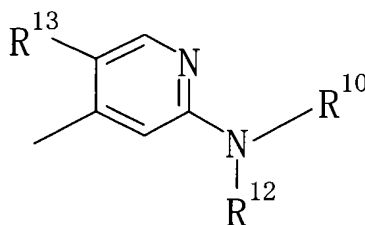
wherein,

$R^{10}$  represents a hydrogen atom,  $C_{1-6}$  alkyl group, hydroxy  $C_{1-6}$  alkyl group,  $C_{1-6}$  alkylsulfinyl  $C_{1-6}$  alkyl group,  $C_{1-6}$  alkylsulfonyl  $C_{1-6}$  alkyl group, carboxy  $C_{1-6}$  alkyl group, , or a group represented by the formula:  $-SO_2-R^{11}$  (in which,  $R^{11}$  represents a  $C_{1-6}$  alkyl, hydroxy  $C_{1-6}$  alkyl, amino  $C_{1-6}$  alkyl,  $C_{1-6}$  alkylamino  $C_{1-6}$  alkyl, di( $C_{1-6}$  alkyl)amino  $C_{1-6}$  alkyl, carboxy  $C_{1-6}$  alkyl, carbamoyl  $C_{1-6}$  alkyl, trifluoromethyl, difluoromethyl, fluoromethyl, amino,  $C_{1-6}$  alkylamino or di( $C_{1-6}$  alkyl)amino),

$R^{12}$  represents a hydrogen atom,  $C_{1-6}$  alkyl group, hydroxy group, or amino group, and

$R^{13}$  represents a  $C_{1-6}$  alkyl group, halogen atom or cyano group; an N-oxide ~~or S-oxide~~ thereof; or a salt thereof.

Claim 9 (Currently Amended): A compound according to Claim 1, wherein  $R^2$  represents a group represented by the following formula:



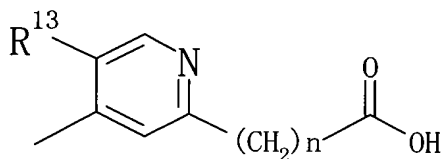
wherein,

R<sup>10</sup> represents a group represented by the formula: -SO<sub>2</sub>-R<sup>11</sup> (in which, R<sup>11</sup> represents a C<sub>1-6</sub> alkyl, hydroxy C<sub>1-6</sub> alkyl, amino C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkylamino C<sub>1-6</sub> alkyl, di(C<sub>1-6</sub> alkyl)amino C<sub>1-6</sub> alkyl, carboxy C<sub>1-6</sub> alkyl, carbamoyl C<sub>1-6</sub> alkyl, trifluoromethyl, difluoromethyl, fluoromethyl, amino, C<sub>1-6</sub> alkylamino or di(C<sub>1-6</sub> alkyl)amino),

R<sup>12</sup> represents a hydrogen atom, C<sub>1-6</sub> alkyl group, hydroxy group or amino group, and

R<sup>13</sup> represents a C<sub>1-6</sub> alkyl group, halogen atom or cyano group; an N-oxide or S-oxide thereof; or a salt thereof.

Claim 10 (Currently Amended): A compound according to Claim 1, wherein R<sup>2</sup> represents a compound represented by the formula:

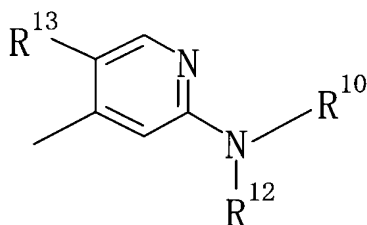


wherein,

R<sup>13</sup> represents a C<sub>1-6</sub> alkyl group, halogen atom or cyano group, and n stands for an integer of from 0 to 6; an N-oxide or S-oxide thereof; or a salt thereof.

Claim 11 (Currently Amended): A compound according to Claim 1, wherein R<sup>1</sup> represents a 2,5-difluorophenyl or 2-fluoro-5-cyanophenyl group, R<sup>3</sup> represents a 5-chloro-2-pyridyl, 6-chloro-3-pyridyl, or 6-trifluoromethyl-3-pyridyl group; R<sup>2</sup> represents a group

represented by the following formula:



wherein,

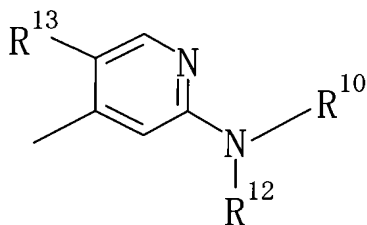
R<sup>10</sup> represents a hydrogen atom, C<sub>1-6</sub> alkyl group, hydroxy C<sub>1-6</sub> alkyl group, C<sub>1-6</sub> alkylsulfinyl C<sub>1-6</sub> alkyl group, C<sub>1-6</sub> alkylsulfonyl C<sub>1-6</sub> alkyl group, carboxy C<sub>1-6</sub> alkyl group, or a group represented by the formula: -SO<sub>2</sub>-R<sup>11</sup> (in which, R<sup>11</sup> represents a C<sub>1-6</sub> alkyl, hydroxy C<sub>1-6</sub> alkyl, amino C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkylamino C<sub>1-6</sub> alkyl, di(C<sub>1-6</sub> alkyl)amino C<sub>1-6</sub> alkyl, carboxy C<sub>1-6</sub> alkyl, carbamoyl C<sub>1-6</sub> alkyl, trifluoromethyl, difluoromethyl, fluoromethyl, amino, C<sub>1-6</sub> alkylamino, or di(C<sub>1-6</sub> alkyl)amino),

R<sup>12</sup> represents a hydrogen atom, C<sub>1-6</sub> alkyl group, hydroxy group, or amino group, and

R<sup>13</sup> represents a C<sub>1-6</sub> alkyl group, halogen atom or cyano group; an N-oxide or S-oxide thereof; or a salt thereof.

Claim 12 (Currently Amended): A compound according to Claim 1, wherein R<sup>1</sup> represents a 2,5-difluorophenyl or 2-fluoro-5-cyanophenyl group, R<sup>3</sup> represents a 5-chloro-2-pyridyl, 6-chloro-3-pyridyl or 6-trifluoromethyl-3-pyridyl group;

R<sup>2</sup> represents a group represented by the following formula:



wherein,

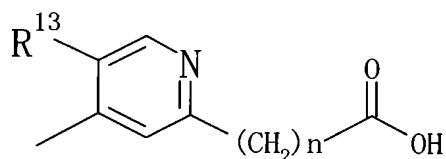
$R^{10}$  represents a group represented by the formula:  $-SO_2-R^{11}$  (in which,  $R^{11}$  represents a  $C_{1-6}$  alkyl, hydroxy  $C_{1-6}$  alkyl, amino  $C_{1-6}$  alkyl,  $C_{1-6}$  alkylamino  $C_{1-6}$  alkyl, di( $C_{1-6}$  alkyl)amino  $C_{1-6}$  alkyl, trifluoromethyl, difluoromethyl, fluoromethyl, amino,  $C_{1-6}$  alkylamino or di( $C_{1-6}$  alkyl)amino),

$R^{12}$  represents a hydrogen atom,  $C_{1-6}$  alkyl group, hydroxy group or amino group, and

$R^{13}$  represents a  $C_{1-6}$  alkyl group, halogen atom or cyano group; an N-oxide ~~or S-~~  
~~oxide~~ thereof; or a salt thereof.

Claim 13 (Currently Amended): A compound according to Claim 1, wherein  $R^1$  represents a 2,5-difluorophenyl or 2-fluoro-5-cyanophenyl group,  $R^3$  represents a 5-chloro-2-pyridyl, 6-chloro-3-pyridyl, or 6-trifluoromethyl-3-pyridyl group;

$R^2$  represents a group represented by the following formula:



wherein,

$R^{13}$  represents a  $C_{1-6}$  alkyl group, halogen atom or cyano group and  $n$  stands for an integer of from 0 to 6; an N-oxide ~~or S-~~  
~~oxide~~ thereof; or a salt thereof.

Claims 14-16 (Canceled).

Claim 17 (Currently Amended): A pharmaceutical composition comprising a compound as claimed in Claim 1, an N-oxide ~~or S-~~  
~~oxide~~ thereof, or a salt thereof and a pharmaceutically acceptable carrier.



Claims 18-20 (Canceled):

Claim 21 (Currently Amended; Withdrawn): A method of treating a disease resulting from abnormal production or secretion of  $\beta$ -amyloid protein, which comprises administering an effective amount of a compound as claimed in Claim 1, an N-oxide ~~or S-oxide~~ thereof, or a salt thereof.

Claim 22 (Previously Presented, Withdrawn): A method according to Claim 21, wherein the disease resulting from abnormal production or secretion of  $\beta$  amyloid protein is Alzheimer disease or Down syndrome.

Claim 23 (Previously Presented): A compound according to Claim 1, comprising at least one selected from the group consisting of:

[5-Chloro-4-[(5-chloropyridin-2-ylsulfonyl)(2,5-difluorophenyl)methyl]pyridin-2-yl]amine,

N-[5-Chloro-4-[(5-chloropyridin-2-ylsulfonyl)(2,5-difluorophenyl)methyl]pyridin-2-yl]methanesulfonamide,

t-Butyl [5-chloro-4-[(6-chloropyridin-3-ylthio)(2,5-difluorophenyl)methyl]pyridin-2-yl]carbamate,

[5-Chloro-4-[(6-chloropyridin-3-ylsulfonyl)(2,5-difluorophenyl)methyl]pyridin-2-yl]amine, and

[5-Chloro-4-[(2,5-difluorophenyl)(6-trifluoromethylpyridin-3-ylsulfonyl)methyl]pyridin-2-yl]amine..